

Application Serial No. 10/788,840
Date October 12, 2006
Reply to Office Action dated August 16, 2006

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CENTRAL FAX CENTER Page 2 of 6

OCT 12 2006

Listing of the Claims:

1. (Currently amended) A method of automatically performing liquid microextraction analysis on a plurality of samples in separate vials comprising the steps of:
 - controlling movement of a syringe in multiple axes;
 - cleaning the syringe;
 - drawing a carrier solvent into the syringe;
 - moving the syringe to a sample vial;
 - inserting a tip of the syringe into the sample vial;
 - collecting a portion of the sample in the syringe;
 - activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe;
 - holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample material in a space above the sample in the vial;
 - drawing the microdrop and the collected portion of the sample into the syringe;
 - withdrawing the syringe from the sample vial;
 - moving the syringe to an instrument injector;
 - injecting the sample into the instrument injector for analysis of the sample; and
 - repeating the prior steps on each of the plurality of samples.
2. (Cancelled)
3. (Original) The method of claim 1 further comprising the step of:
placing a plurality of sample vials in a holder in established coordinate positions.
4. (Original) The method of claim 1 further comprising the step of:
providing a syringe cleaning solution in a known coordinate position.
5. (Original) The method of claim 4 wherein the step of cleaning the syringe comprises the steps of:
 - moving the syringe to the cleaning vial and withdrawing contents of the cleaning solution into the syringe; and

Application Serial No. 10/788,840
Date October 12, 2006
Reply to Office Action dated August 16, 2006

Page 3 of 6

expelling the cleaning solution from the syringe into a waste receptacle.

6. (Original) The method of claim 1 wherein the step of inserting the syringe into the sample vial further comprises the step of:

inserting the syringe into the sample vial to position the tip of the syringe in a head space above a liquid sample in the vial.

7. (Original) The method of claim 1 wherein the step of inserting the syringe into the sample vial further comprises the step of:

inserting the tip of the syringe into the liquid sample in the sample vial.

8. (Currently Amended) An apparatus for automatically performing liquid microextraction analysis of a plurality of samples in separate vials, the apparatus comprising:
means for controlling movement of a syringe in multiple axes;
means for cleaning the syringe;
means for drawing a carrier solvent into the syringe;
means for moving the syringe to a sample vial;
means for inserting a tip of the syringe into the sample vial;
means for collecting a portion of the sample in the syringe, the collecting means further comprising:

means for activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe;

means for holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample material in a space above the sample in the vial;
and

means for drawing the microdrop and the collected portion of the sample into the syringe;

means for withdrawing the syringe from the sample vial;
means for moving the syringe to an instrument injector;
means for injecting the sample into the instrument injector for analysis of the sample.

Application Serial No. 10/788,840

Page 4 of 6

Date October 12, 2006

Reply to Office Action dated August 16, 2006

9. (Currently Amended) A method of automatically performing liquid microextraction analysis on a plurality of samples in separate vials comprising:

- controlling movement of a syringe and sample vial in multiple axes relative to one another;
- cleaning the syringe;
- drawing a carrier solvent into the syringe;
- moving the syringe and sample vial relative to one another;
- inserting a tip of the syringe into the sample vial;
- collecting a portion of the sample in the syringe;
- activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe;
- holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample material in a space above the sample in the vial;
- drawing the microdrop and the collected portion of the sample into the syringe;
- withdrawing the syringe from the sample vial;
- moving the syringe and an instrument injector relative to one another;
- injecting the sample into the instrument injector for analysis of the sample; and
- repeating the prior steps on each of the plurality of samples.

10. (Cancelled)

11. (Currently Amended) The method of claim ~~1~~ 9 further comprising the step of:

- placing a plurality of sample vials in a holder in established coordinate positions.

12. (Currently Amended) The method of claim ~~1~~ 9 further comprising the step of:

- providing a syringe cleaning solution in a known coordinate position.

13. (Currently Amended) The method of claim ~~[[4]]~~ 12 wherein the step of cleaning the syringe comprises the steps of:

Application Serial No. 10/788,840

Page 5 of 6

Date October 12, 2006

Reply to Office Action dated August 16, 2006

moving the syringe and the cleaning vial relative to one another and
withdrawing contents of the cleaning solution into the syringe; and
expelling the cleaning solution from the syringe into a waste receptacle.

14. (Currently Amended) The method of claim 1 9 wherein the step of
inserting the syringe into the sample vial further comprises the step of:

inserting the syringe into the sample vial to position the tip of the syringe in a
head space above a liquid sample in the vial.

15. (Currently Amended) The method of claim 1 9 wherein the step of
inserting the syringe into the sample vial further comprises the step of:

inserting the tip of the syringe into the liquid sample in the sample vial.